UNITED STATES PATENT AND TRADEMARK OFFICE

UNITED STATES DEPARTMENT OF COMMERCE
United States Patent and Trademark Office
Address: COMMISSIONER FOR PATENTS
P.O. Box 1450
Alexandria, Virginia 22313-1450
www.uspto.gov

APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
10/502,242	07/13/2004	Hidenori Wada	10873.1472USWO	7492

53148 7590 06/14/2006

HAMRE, SCHUMANN, MUELLER & LARSON P.C.
P.O. BOX 2902-0902
MINNEAPOLIS, MN 55402

EXAMINER	
HUBER, PAUL W	

ART UNIT	PAPER NUMBER
2627	

DATE MAILED: 06/14/2006

Please find below and/or attached an Office communication concerning this application or proceeding.

Offic Action Summary	Application N .	Applicant(s)	
	10/502,242	WADA ET AL.	
	Examiner	Art Unit	
	Paul Huber	2627	

-- The MAILING DATE of this communication appears on the cover sh et with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

1)☐ Responsive to communication(s) filed on _____.

2a)☐ This action is **FINAL**. 2b)☒ This action is non-final.

3)☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

4)☒ Claim(s) *1-20* is/are pending in the application.

4a) Of the above claim(s) _____ is/are withdrawn from consideration.

5)☐ Claim(s) _____ is/are allowed.

6)☒ Claim(s) *1-11 and 13-20* is/are rejected.

7)☒ Claim(s) *12* is/are objected to.

8)☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

9)☐ The specification is objected to by the Examiner.

10)☐ The drawing(s) filed on _____ is/are: a)☐ accepted or b)☐ objected to by the Examiner.

Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).

Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).

11)☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

12)☒ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).

a)☒ All b)☐ Some * c)☐ None of:

1.☐ Certified copies of the priority documents have been received.

2.☐ Certified copies of the priority documents have been received in Application No. _____.

3.☒ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

* See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

1) ☒ Notice of References Cited (PTO-892)
2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
3) ☒ Information Disclosure Statement(s) (PTO-1449 or PTO/SB/08) Paper No(s)/Mail Date _____.
4) ☐ Interview Summary (PTO-413) Paper No(s)/Mail Date. _____ .
5) ☐ Notice of Informal Patent Application (PTO-152)
6) ☐ Other: _____.

The specification has not been checked to the extent necessary to determine the presence of all possible minor errors. Applicant's cooperation is requested in correcting any errors of which applicant may become aware in the specification.

The following is a quotation of the appropriate paragraphs of 35 U.S.C. 102 that form the basis for the rejections under this section made in this Office action:

> A person shall be entitled to a patent unless –
>
> (b) the invention was patented or described in a printed publication in this or a foreign country or in public use or on sale in this country, more than one year prior to the date of application for patent in the United States.
>
> (e) the invention was described in (1) an application for patent, published under section 122(b), by another filed in the United States before the invention by the applicant for patent or (2) a patent granted on an application for patent by another filed in the United States before the invention by the applicant for patent, except that an international application filed under the treaty defined in section 351(a) shall have the effects for purposes of this subsection of an application filed in the United States only if the international application designated the United States and was published under Article 21(2) of such treaty in the English language.

Claims 1-4, 6, 10, 14, 15, 19 and 20 are rejected under 35 U.S.C. 102(e) as being anticipated by Matsuura (USP-7,035,177).

Regarding claims 1-4, 19 & 20, Matsuura discloses an optical recording/reproducing device and method for correcting an aberration comprising an optical head. See figures 1 and 2. The optical head comprising: a light source 2; an objective lens 6 for focusing light emitted from the light source 2 on an optical recording medium 1; a tilt-related-aberration correcting means 15 for correcting an aberration that occurs when the optical recording medium tilts; and a driving amount determining means (13, 14) for determining a driving amount necessary for the tilt-related-aberration correcting means 15. The tilt-related-aberration correcting means 15 is provided with the driving amount determined by the driving amount determining means (13, 14) according to information concerning a tilt of the optical recording medium 1 and information concerning a substrate thickness of the optical recording medium 1. See abstract.

Regarding claim 6, a tilt detecting means 11 detects information concerning the tilt of the optical recording medium 1 and outputs tilt signal TLTES.

Regarding claim 10, a substrate thickness detecting means 11 detects information concerning the substrate thickness of the optical recording medium 1 and outputs substrate thickness signal THES.

Regarding claim 14, a substrate-thickness-related-aberration correcting means 15 corrects an aberration that occurs due to a deviation of the substrate thickness of the optical recording medium 1 from a standard value of the substrate thickness.

Regarding claim 15, the substrate-thickness-related-aberration correcting means 15 (see figure 25), comprises: a positive lens group 6a and a negative lens group 6b disposed in an optical path; and a means 15c for varying a lens distance between the positive lens group 6a and the negative lens group 6b.

Claims 1, 6, 9, 10, 13, 14 and 16-20 are rejected under 35 U.S.C. 102(b) as being anticipated by Ogasawara (USP-6,141,304).

Regarding claims 1, 19 & 20, Ogasawara discloses an optical recording/reproducing device and method for correcting an aberration comprising an optical head. See figure 1. The optical head comprising: a light source 1; an objective lens 5 for focusing light emitted from the light source 1 on an optical recording medium 6; a tilt-related-aberration correcting means (20; see for example figure 11A-12B) for correcting an aberration that occurs when the optical recording medium tilts; and a driving amount determining means (9, 10) for determining a driving amount necessary for the tilt-related-aberration correcting means 20. The tilt-related-aberration correcting means 20 is provided with the driving amount determined by the driving amount determining means (9, 10) according to information concerning a tilt of the optical recording medium 6 and information concerning a substrate thickness of the optical recording medium 6. See abstract, and col. 10, line 41 through col. 14, line 2.

Regarding claim 6, a tilt detecting means 9 detects information concerning the tilt of the optical recording medium 6.

Regarding claim 9, the optical head inherently includes a memory (i.e., static or the optical recording medium itself) which stores information representing whether the optical recording medium is a CD or DVD, i.e., concerning the substrate thickness as claimed.

Regarding claims 10 & 14, the optical recording/reproducing device inherently includes a means for detecting whether the loaded recording medium is a DVD or a CD for correcting the aberration due to the thickness of a substrate of the optical disk. Therefore, the device includes a substrate thickness detecting means for detecting information (whether medium is a DVD or a CD) concerning the substrate thickness of the optical recording medium as claimed. A substrate-thickness-r lat d-aberration correcting means 20 corrects an aberration that occurs due to the deviation of the substrate thickness as claimed.

Regarding claims 13 & 16-18, the tilt-related-aberration correcting means (see figure 11A, for example) is formed with an optical element 20 comprising: a pair of substrates (301a, 301b) having transparent conductive thin films (302a, 302c), respectively; and a phase shifting layer 304 interposed between the pair of substrates. A pattern capable of correcting an aberration that occurs due to the tilt of the optical recording medium 6 is formed on one of the conductive thin films (see figures 11C & 11D).

The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

> (a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negatived by the manner in which the invention was made.

This application currently names joint inventors. In considering patentability of the claims under 35 U.S.C. 103(a), the examiner presumes that the subject matter of the various claims was commonly owned at the time any inventions covered therein were made absent any evidence to the contrary. Applicant is advised of the obligation under 37 CFR 1.56 to point out the inventor and invention dates of each claim that was not commonly owned at the time a later invention was made in order for the examiner to consider the applicability of 35 U.S.C. 103(c) and potential 35 U.S.C. 102(e), (f) or (g) prior art under 35 U.S.C. 103(a).

Claim 5 is rejected under 35 U.S.C. 103(a) as being unpatentable over either one of Matsuura or Ogasawara, as separately applied to claim 1 above, in further view of Nakamura et al. (WO-00/79525).

Either one of Matsuura or Ogasawara discloses the invention as claimed, but fails to specifically teach that the driving amount determining means includes a memory in which information concerning the driving amount for the tilt-related-aberration correcting means that is necessary for correcting an aberration that occurs due to a tilt of the optical recording medium is stored. Nakamura et al. discloses that "tilt adjustment ... is set for each information surface" in a memory (i.e., static or stored in the dynamic recording medium itself), in the same field of endeavor, for the purpose of rapidly determining the initial tilt adjustment necessary for the optical head upon accessing an information surface of the recording medium. See abstract.

It would have been obvious to one having ordinary skill in the art at the time the invention was made to modify either one of Matsuura or Ogasawara such that the driving amount determining means includes a memory, (e.g., static or stored in the dynamic recording medium itself) in which information concerning the driving amount for the tilt-related-aberration correcting means that is necessary for correcting an aberration that occurs due to a tilt of

the optical recording medium is initially stored, as taught by Nakamura et al.. A practitioner in the art would have been motivated to do this for the purpose of rapidly determining the initial tilt adjustment necessary for the optical head upon accessing an information surface of the recording medium.

Claim 7 is rejected under 35 U.S.C. 103(a) as being unpatentable over Ogasawara, as applied to claim 6 above, in further view of Nagasato (USP-6,259,665).

Ogasawara discloses the invention as claimed, but fails to specifically teach that the tilt detecting means 9 includes: a second light source different from the light source 1; a focusing lens for focusing light emitted from the second light source on the optical recording medium; and a photodetector for detecting light reflected by the optical recording medium. Nagasato discloses a tilt detecting means (figure 3) including: a second light source 10 different from the recording/reproducing light source; a focusing lens 1 for focusing light emitted from the second light source 10 on the optical recording medium; and a photodetector 11 for detecting light reflected by the optical recording medium, in the same field of endeavor, for the purpose of compensating for tilt of the recording medium.

It would have been obvious to one having ordinary skill in the art at the time the invention was made to modify Ogasawara such that the optical head includes a tilt detecting means which includes: a second light source different from the light source 1; a focusing lens for focusing light emitted from the second light source on the optical recording medium; and a photodetector for detecting light reflected by the optical recording medium, as taught by Nagasato. A practitioner in the art have been motivated to do this for the purpose of reliably detecting the tilt of the recording medium without the need of a detached tilt detecting sensor 9, thereby decreasing the size of the device.

Claim 8 is rejected under 35 U.S.C. 103(a) as being unpatentable over Ogasawara, as applied to claim 6 above, in further view of Paku (JP-2000348362).

Ogasawara discloses the invention as claimed, but fails to disclose that the tilt detecting means detects focus zero-crossing positions at two certain points in a radial direction of the optical recording medium, and detects a tilting amount of the optical recording medium based on a difference between values of a focus search voltage at the two points, the focus search voltage being a voltage for detecting the focus zero-crossing position. Paku discloses a tilt detecting means which detects focus zero-crossing positions at two certain points in a radial direction of the optical r cording medium, and detects a tilting amount of the optical recording medium based on a difference between values of a focus search voltage at the two points, the focus search voltage being a voltage for detecting the focus

zero-crossing position, in the same field of endeavor, for the purpose of compensating for tilt of the recording medium. See abstract.

It would have been obvious to one having ordinary skill in the art at the time the invention was made to modify Ogasawara such that the optical head includes a tilt detecting means which detects focus zero-crossing positions at two certain points in a radial direction of the optical recording medium, and detects a tilting amount of the optical recording medium based on a difference between values of a focus search voltage at the two points, the focus search voltage being a voltage for detecting the focus zero-crossing position, as taught by Paku. A practitioner in the art would have been motivated to do this for the purpose of reliably detecting the tilt of the recording medium without the need of a separate tilt detecting sensor 9, thereby reducing the complexity and cost of the device.

Claim 11 is rejected under 35 U.S.C. 103(a) as being unpatentable over Matsuura, as applied to claim 10 above, in further view of Shingo et al. (JP-2000020993).

Matsuura discloses the invention as claimed, but fails to specifically teach that the substrate thickness detecting means further includes a second light source different from the recording/reproducing light source. Shingo et al. discloses an optical head including a substrate thickness detecting means including: a second light source 8b different from the recording/reproducing light source 8a; a focusing lens 2a for focusing light emitted from the second light source on an optical recording medium; and a photodetector for detecting light reflected by the optical recording medium. Shingo discloses the substrate thickness detecting means (see figure 1), in the same field of endeavor, for the purpose of "correcting in real time the effects of aberration resulting from the thickness error of an optical disk substrate" (abstract).

It would have been obvious to one having ordinary skill in the art at the time the invention was made to modify Matsuura such that the substrate thickness detecting means further includes a second light source different from the recording/reproducing light source, as taught by Shingo et al.. A practitioner in the art would have been motivated to do this for the purpose of more accurately detecting the substrate thickness of the recording medium using a separate light source which can be tailored to specifically meet the demands of this function.

The prior art made of record and not relied upon is considered pertinent to applicant's disclosure. Nakamura et al., Ueda et al., Shimano et al., Lee et al., Yagi et al., Chung et al., Ogasawara and Wada et al. each disclose an optical head including means for compensating for aberration.

Claim 12 is objected to as being dependent upon a rejected base claim, but would be allowable if rewritten in independent form including all of the limitations of the base claim and any intervening claims.

Any inquiry concerning this communication should be directed to Paul Huber at telephone number 571-272-7588.

Paul Huber
Primary Examiner
Art Unit 2627

pwh
May 31, 2006